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## Too much information may not always be a good thing

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**Title: Too Much Information may not always be a Good Thing**

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Most contemporary vascular surgeons practice in an increasingly cost-constrained environment where the value of an intervention is primarily dictated by outcome. In theory, at least, this should drive a culture towards delivering optimal, cost-effective care. However, this may not always be the case. The UK government continues to publish annual individual surgeon specific mortality and morbidity data following abdominal aortic aneurysm (AAA) surgery and carotid endarterectomy, but in the current issue of the European Journal of Vascular and Endovascular Surgery, Karthikesalingam et al. argue that this may actually predispose towards a “risk averse” culture among surgeons. This could result in “higher risk” patients being denied surgery because of fears about increased procedural risks, which may attract adverse criticism when “league tables” are published.<sup>1</sup>

In reality, patients want to hear “jargon-free” language from their surgeon, they want to be “heard,” and they want to be “central” to decision-making during any discussion of their care.<sup>2</sup> In the UK mandatory public reporting of individual surgeon outcome data is a requirement for appraisal and revalidation; however, in most EU and US countries, no mandatory reporting of outcomes is required, leading to concerns about poor public/professional awareness regarding mortality and morbidity after AAA/carotid interventions.

The modern era of transparency and the involvement of well-informed patients have undoubtedly led to changes in attitude regarding the delivery of optimal health care. However, simply focusing on the performance of an individual operator might result in an unwanted situation where “risk averse” behavior might lead to very few surgeons having the capability and technical skills to undertake complex vascular interventions. It is also completely contrary to modern vascular and endovascular practice, which actively embraces multidisciplinary team-working, shared intensive preoperative risk optimization, and 24/7 provision of teams for dealing with emergency vascular problems such as aortic transection and AAA rupture. Delivering high quality care in these situations requires a team, not the technical skills of one person alone.

Given current requirements for public reporting from single surgeons alongside quality constraints in health care leading towards a zero tolerance of poorer outcomes (even when not a result of surgical error), vascular surgeons (now more than ever) are being subtly driven towards managing “numbers” rather than patients. The high rates of patients deemed “unsuitable” for aneurysm repair in some parts of the world (higher in Europe than in the USA<sup>3</sup>) is probably based on a highly subjective assessment of risk, as shown by varying rates among European countries ranging from 37% in the UK to 18% in Sweden,<sup>4,5</sup> and which will inevitably be subject to “risk averse” behavior if there are concerns about outcome reporting. In the modern endovascular era, there are a few reasonable criteria for justifying a non-operative approach to treating patients with a large aortic aneurysm and this has to be considered in parallel with the much higher risk of death (through rupture) if left untreated. Put simply: when criteria for performing elective repair are set too high, the number of patients turned down for elective treatment increases. This will probably result in low elective mortality rates (i.e. making the individual surgeon look good), but it will almost certainly increase overall AAA mortality. Accordingly, it would clearly be preferable (in addition to individual surgeon outcome reporting), that surgeons/hospitals also publish their elective AAA turn-down rates to increase transparency and identify sub-optimal practices that may be a direct consequence of “risk averse” behavior.

Although public reporting may also adversely impact on carotid interventions for preventing stroke, this is probably less than for AAA; however, there does appear to be even poorer public and professional access to volume/outcome data. In the current issue, Chaturvedi reports that only a quarter of hospitals in a large US metropolitan area provided annual CEA volume data to the public and other professionals, while not one of

the 30 audited centers provided any data regarding institutional or individual surgeon outcome data after CEA.<sup>6</sup>

The management of carotid disease has undergone considerable change over the last decade, through the emergence of carotid artery stenting (CAS) and, in particular, a move towards performing carotid interventions within 14 days of onset of a transient ischemic attack or minor stroke, with some even advocating a 48-hour threshold. However, operating early on a patient with recent symptoms, even though this might confer the greatest long-term benefit to patients as a whole, might also be associated with an increase in procedural risk, even for highly skilled surgeons. “Risk averse” behavior by surgeons might therefore favor either operating on a greater proportion of asymptomatic patients or introducing subtle delays to treatment in symptomatic patients (to achieve the lowest procedural risks in a league table), but at considerable cost to the patient whose risk of recurrent stroke is highest in the first week after onset of symptoms. However, evidence suggests that service reconfigurations and close multidisciplinary team-working can overcome “risk averse” behavior, while contributing towards significant reductions in delays to treatment, and that CEA can be performed in the hyperacute period without significantly increasing the operative risk.<sup>7e9</sup>

#### BEYOND NUMBERS.

It is also difficult for patients (and indeed professionals) to meaningfully interpret published reports. This is not just attributable to problems with cognition and numeracy, but mostly in the manner in which data are presented.<sup>10</sup> This is exemplified by the CARE (Carotid Artery Revascularization and Endarterectomy) Registry which reported on CAS outcomes across 188 hospitals performing 19,381 CAS procedures between 2005 and 2013.<sup>11</sup> In this report, unadjusted in-hospital stroke and/or death rates ranged from 0% to 18.8%. However, following adjustment, risk standardized stroke/death rates were reduced to 1.2-4.7%. Even within the limitations of registry-driven data, these findings indicate the absolute importance of correcting for case mix. If unadjusted individual interventionist outcome data had been released into the public domain, a number of interventionists might have been unfairly criticized for poor (negligent) practice.

Complications and deaths after surgery are upsetting (for everyone) and it is only natural that anyone involved in the delivery of health care should strive to reduce these to the minimum. However, complications, if viewed simply as numbers, are not always the best way of identifying quality or poor performance, especially if “risk averse” behavior leads to higher turn-down rates. Although technical expertise and training are basic requirements for any practicing vascular surgeon, the concept of “competence” cannot simply refer to technical expertise, as in the Hippocratic model, but should reflect a person’s ability to deal with complexity, uncertainty, and mastery in teamwork and planning. To provide the best level of care, hospitals/institutions must have people, pathways, and resources more than just occasional individual excellence. Public scrutiny, transparency, and accountability are important, but they should not be allowed to lead to excessive “risk averse” behavior among surgeons, as this will ultimately compromise optimal patient care.

#### REFERENCES

- 1 Karthikesalingam A, Holt PJE, Loftus IM, Thompson MM. Risk aversion in vascular intervention: the consequences of publishing surgeon-specific mortality for abdominal aortic aneurysm repair. *Eur J Vasc Endovasc Surg* 2015;50:698e701.
- 2 Pepper JR, Coonar AS. High-risk surgery: the courage to fail. *J R Soc Med* 2015;108:44e6.
- 3 Karthikesalingam A, Holt PJ, Vidal-Diez A, Ozdemir BA, Poloniecki JD, Hinchliffe RJ, et al. Mortality from ruptured abdominal aortic aneurysms: clinical lessons from a comparison of outcomes in England and the USA. *Lancet* 2014;383:963e9.
- 4 Western CE, Carlisle J, McCarthy RJ, Currie IC. Palliation of abdominal aortic aneurysms in the endovascular era. *Eur J Vasc Endovasc Surg* 2013;45:37e43.
- 5 Heikkinen M, Salenius J, Zeitlin R, Saarinen J, Suominen V, Metsänoja R, et al. The fate of AAA patients referred electively to vascular surgical unit. *Scand J Surg* 2002;91:345e52.
- 6 Chaturvedi S, Loftus I. Can patients select the best hospital for carotid revascularization? *Eur J Vasc Endovasc Surg* 2015;50: 695e7.
- 7 Sharpe R, Sayers RD, London NJ, Bown MJ, McCarthy MJ, Nasim A, et al. Procedural risk following carotid endarterectomy in the hyperacute period after onset of symptoms. *Eur J Vasc Endovasc Surg* 2013;46:519e24.
- 8 Salem MK, Sayers RD, Bown MJ, Eveson DJ, Robinson TG, Naylor AR. Rapid access carotid endarterectomy can be performed in the hyperacute period without a significant increase in procedural risks. *Eur J Vasc Endovasc Surg* 2011;41:222e8.

- 9 Rantner B, Schmidauer C, Knoflach M, Fraedrich G. Very urgent carotid endarterectomy does not increase the procedural risk. *Eur J Vasc Endovasc Surg* 2015;49:129e36.
- 10 Minami CA, Dahlke A, Bilimoria KY. Public reporting in surgery: an emerging opportunity to improve care and inform patients. *Ann Surg* 2015;261:241e2.
- 11 Hawkins BM, Kennedy KF, Aronow HD, Nguyen LL, White CJ, Rosenfield K, et al. Hospital variation in carotid stenting outcomes. *JACC Cardiovasc Interv* 2015;8:858e63.